

Smart hybrid dual water conditioning system

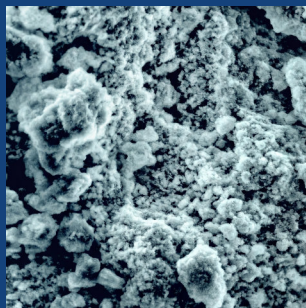
The eMagcat is a two-stage commercial and industrial water conditioning system suitable for treating potable, processed, recycled, or wastewater and providing the most complete reaction available for calcium carbonate treatment. The eMagcat combines Fluid Dynamics' patented catalytic core with an advanced, powered electromagnetic field.

Unlike standard units, the eMagcat monitors its treatment in real-time. It is a compact, hybrid solution for commercial and industrial water treatment.



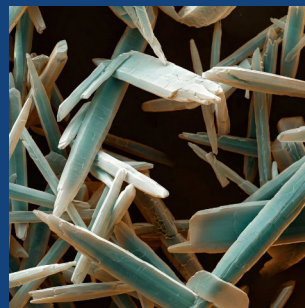
UNTREATED

Forms large hard crystals



TREATED

Forms small, soft, easy to remove crystals



Benefits

- ✓ 3-year pro-rata warranty
- ✓ Water can stay effectively treated for up to 3 months
- ✓ Prolongs the life of water-using applications and heating systems
- ✓ Reduces limescale build-up in pipes, valves, pumps and heating element
- ✓ Reduces energy consumption generating cost savings
- ✓ Powered hybrid system with real-time treatment tracking via an IP65-rated screen
- ✓ Features a potential-free contact for BMS power-failure alerts
- ✓ Easy to install - horizontally or vertically, with a shorter body length for compact footprint rooms
- ✓ Cost-effective, proven and sustainable
- ✓ No upper limit to water hardness that can be treated
- ✓ No metals leaching into the water
- ✓ No upstream or downstream space required
- ✓ World-class dual treatment technology capable of treating wide flow rate range

Applications

- ✓ Apartment blocks
- ✓ Commercial offices
- ✓ Schools
- ✓ Universities & colleges
- ✓ Leisure centres
- ✓ Cruise ships
- ✓ Maritime transport
- ✓ Cinemas
- ✓ Retail parks / shopping centres
- ✓ Restaurants
- ✓ Farming / irrigation
- ✓ Marine applications
- ✓ [Much more!](#)

Materials of construction

- ✓ Stainless steel housing
- ✓ Non-sacrificial catalytic semi precious alloy (lead-free)
- ✓ Low-energy electromagnetic field system, capable of up to 2500 Gauss

Life expectancy

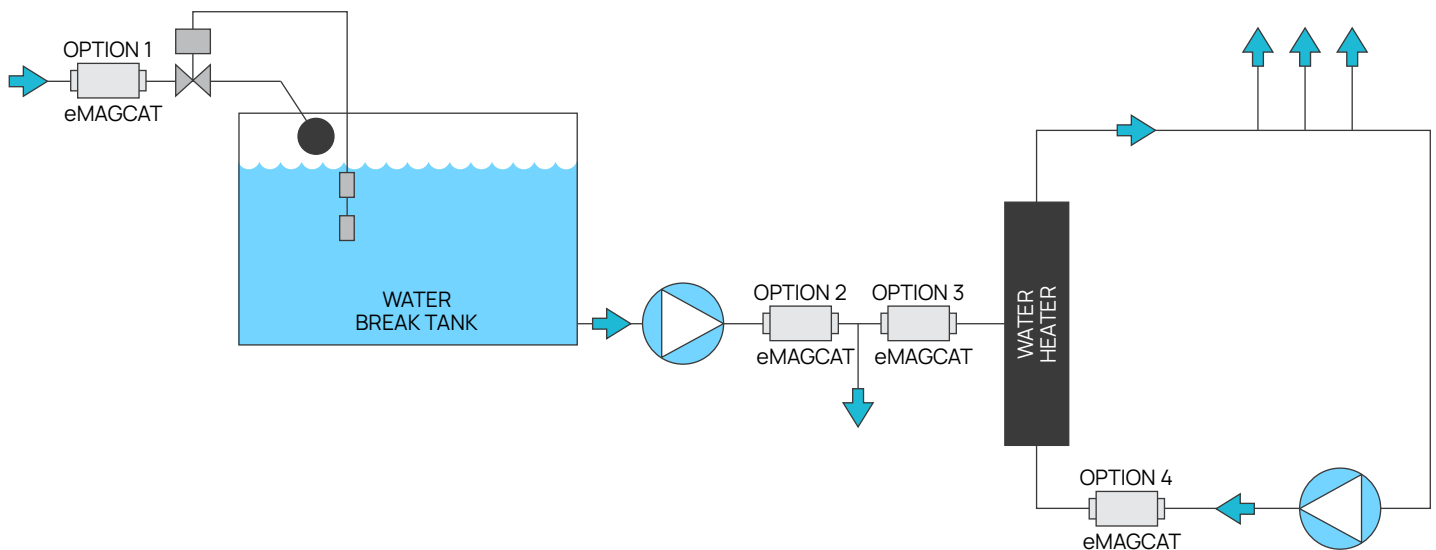
- ✓ 10 years service depending on use

INSTALLATION GUIDE

Sizing

- ✓ Size matters - selecting the right conditioner is critical
- ✓ An incorrectly sized conditioner - including using a larger diameter than needed - can compromise water delivery and affect treatment
- ✓ Conditioner size should be selected based on flow rate
- ✓ Applications where the flow rate is known to be low or there is relatively heavy scale build-up inside the pipe already, a conditioner 1 size smaller than the pipe diameter is recommended
- ✓ Conditioners can be installed vertically or horizontally

OPTION 1: INSTALL ON FEED TO TANK
IF DELAYED ACTION BALL VALVE OR
LEVEL SWITCH FILL INSTALLED



A water conditioning device induces nucleation of hardness scale and in doing so prevents hard deposits forming. As such, a water conditioning device does not remove the hardness and may still be present in evaporative conditions.

Fitting options

Fluid Dynamics has a wide range of connection options available - please ask.

COMMON THREADS

$\frac{3}{4}$ " to 1.5" BSPT (British Standard Pipe Tapered) threads

FLANGES

Flanges specified from 2" to 4" (BS4504 PN16 standard fitting)

Higher pressure ratings are available upon request

Smart hardware integration

IP65-rated screen

Displays a live treatment % readout. If the treatment level falls to approximately half, servicing is required.

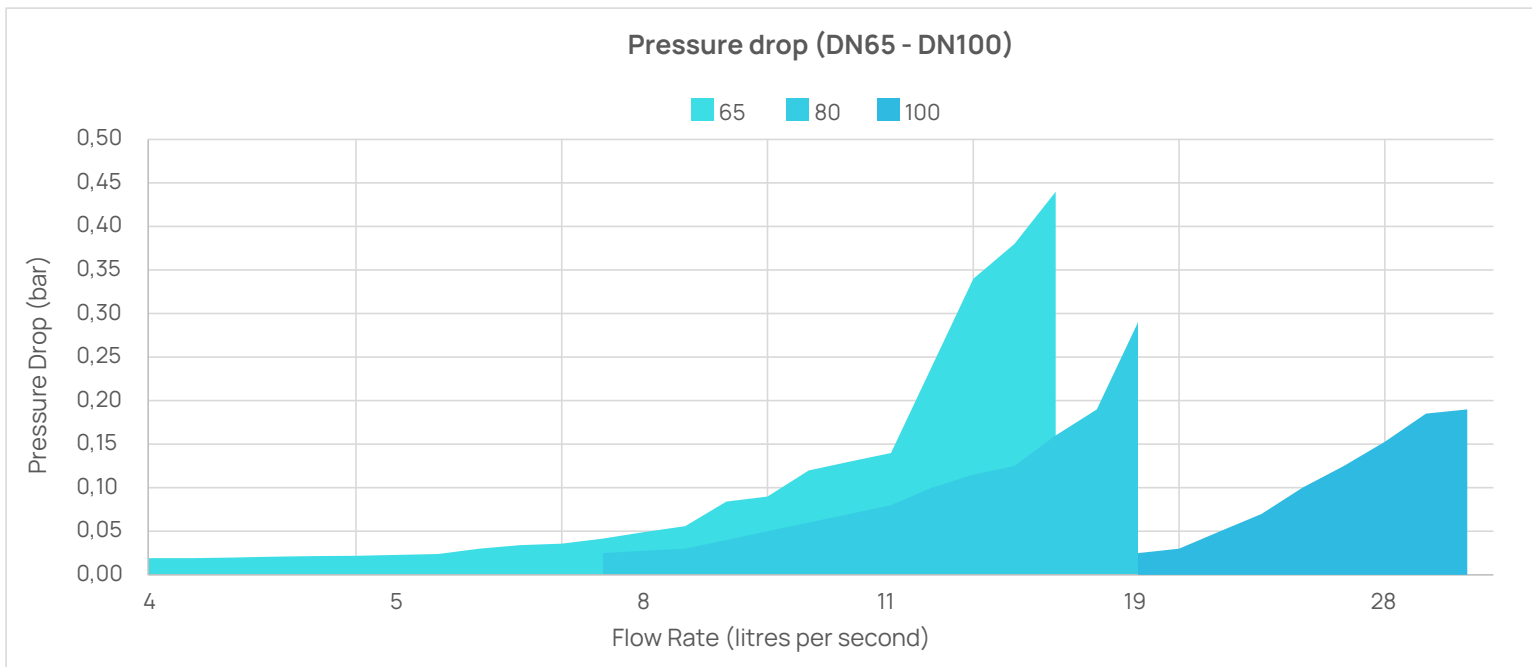
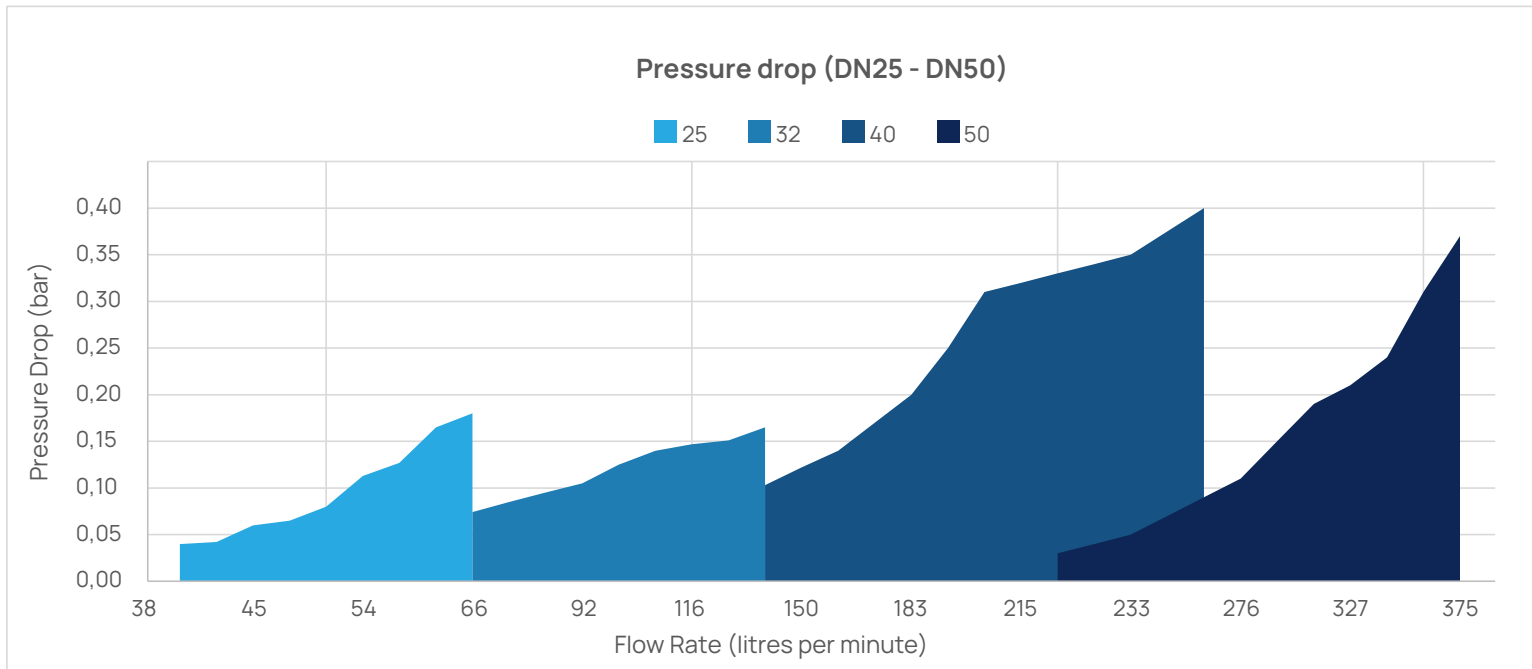
BMS connection

The panel incorporates a potential-free fault contact.

PRESSURE LOSSES

Both our catalytic and combination (dual) systems have internal components designed specifically to minimise resistance as water passes through

Correctly installed conditioners will have a negligible impact on pressure drop



CLIENTS




CATALYTIC TECHNOLOGY PROVEN BY

DATA TABLE

Water temp (°C)	0 to 80
Max pressure (bar)	16 (Higher available on request)
Materials	External: Stainless steel housing and connectors Internal: FD catalytic galvanic alloy and central shaft stainless steel 304
Power supply	220-240 VAC/1/50-60 Hz

Product code	Description	Connection type	Suitable for pipe diameter	Optimal flow range (l/min)	Diameter of housing (mm)	Length (mm)	Weight (kg)	Power consumption (W)
eMAT20BS	eMagcat 20	¾" BSPT	¾" (DN20) 1" (DN25)	24 - 54	60	245	1.75	10
eMAT25BS	eMagcat 25	1" BSPT	1" (DN25) 1¼" (DN32)	45 - 90	102	260	4.22	25
eMAT32BS	eMagcat 32	1¼" BSPT	1¼" (DN32) 1½" (DN40)	85 - 120	114	250	5.94	33
eMAT40BS	eMagcat 40	1½" BSPT	1½" (DN40) 2" (DN50)	110 - 210	141	250	9.5	65
eMAT50BS	eMagcat 50	2" Flange	2" (DN50) 2½" (DN65)	170 - 330	273	270	28.1	75
eMAT65PN	eMagcat 65	2½" Flange	2½" (DN65) 3" (DN80)	310 - 675	324	270	37.4	85
eMAT80PN	eMagcat 80	3" Flange	3" (DN80) 4" (DN100)	600 - 1175	406	270	49	220
eMAT100PN	eMagcat 100	4" Flange	4" (DN100) 5" (DN125)	950 - 1750	508	270	66	450

*Weight excludes control panel. Panel screen is IP65-rated with an incorporated wall mount; panel is IP40-rated.

SPECIFICATION CLAUSE: EXAMPLE

The mechanical contractor shall supply and install a WRAS approved dual treatment physical water conditioning device for the inhibition of hard limescale formation within the domestic water supply system.

This design is based on the eMagcat smart hybrid water conditioner, utilising a non-sacrificial galvanic catalytic alloy conditioning core combined with a powered electromagnetic field capable of up to 2500 Gauss.

On appointment, in order to confirm the most effective position in the H/CWS system for the physical water conditioner, the mechanical contractor shall coordinate with the manufacturer, and take into account the water services design and local water quality.

The device shall generally be in accordance with the following parameters:

1. Connection type: model-specific BSPT thread or PN16 flange
2. Design flow rate: model-specific matching the Fluid Dynamics core
3. Pressure drop: less than 0.4 bar across flow range
4. Power supply: 220-240 VAC/1/50-60 Hz
5. BMS connection

The dual treatment physical water conditioner shall consist of the following features:

1. Non-sacrificial catalytic alloy conditioning core
2. Low-energy electromagnetic system generating up to 2500 Gauss
3. Integrated control panel with an IP65-rated screen displaying real-time treatment percentage
4. Potential free contact for BMS integration to flag system power failure
5. Effective treatment period up to 3 months
6. Manufactured in a stainless steel housing with a 304 stainless steel central shaft
7. Minimum warranty 3 years

The device shall be installed in strict accordance with the manufacturer's literature, including panel mounting and wiring configuration. The above-recommended specification clauses are intended to cover a wide range of installation applications. For a project-specific specification, it is recommended to discuss with an Evolve Water representative.

ENVIRONMENTAL DATA

Environmental data summary	eMagcat physical water conditioning
Declared unit	1 unit of water conditioning equipment
Declared unit mass	Model specific
GWP-fossil A1-A3 (kgCO2e)	Model specific
GWP-total A1-A3 (kgCO2e)	Model specific
Secondary material, inputs %	0%
Secondary material, outputs %	>80%
Total energy use, A1-A3 (kWh)	Model specific
Total water use, A1-A3 (m3)	Model specific
Product raw material	
Metal amount, mass %	>85%
Mineral amount, mass %	<5%
Fossil materials amount, mass %	<12%
Bio-based materials amount, mass %	0%
Biogenic carbon content	
Biogenic carbon content on product, kg C	0
Biogenic carbon content in packaging, kg C	Model specific
Functional unit and service life	
Declared unit	1 unit of water conditioning equipment
Declared unit mass	Model specific
Reference service life	25 years